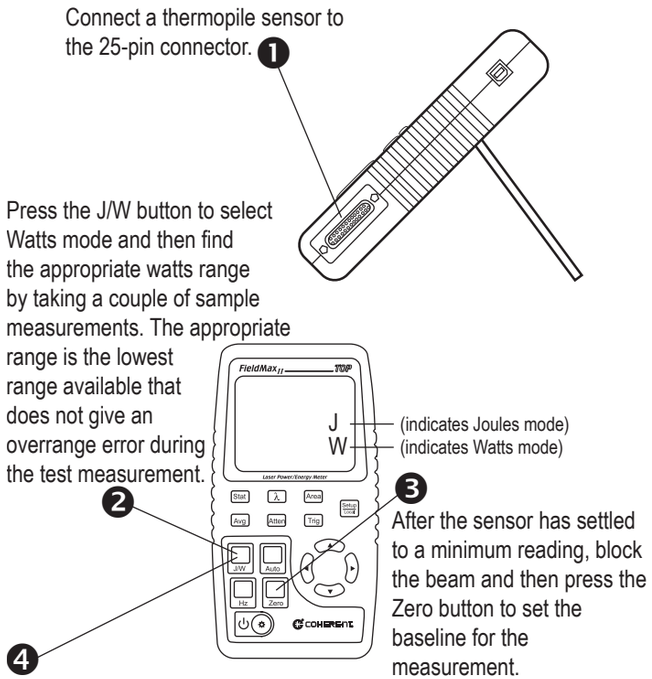
Measuring Single-Pulse Energy With a Thermopile Sensor

The following illustration explains how to take a single long-pulse (1 ms to 10 sec.) energy measurement using a thermopile sensor.


Connect a thermopile sensor to the 25-pin connector.
1
Press the J/W button to select Watts mode and then find the appropriate watts range by taking a couple of sample measurements. The appropriate range is the lowest range available that does not give an overrange error during the test measurement.
2
J
W
(indicates Joules mode)
(indicates Watts mode)
3
After the sensor has settled to a minimum reading, block the beam and then press the Zero button to set the baseline for the measurement.
4
Press the J/W button to select Joules mode. The Range (Up and Down arrows), Zero button, and Auto button should not be used from this point on. If an overrange error occurs, the range must be adjusted by returning to the Watts mode.

When FieldMaxII-TOP is prepared for the first measurement, the TRIG? annunciator displays at the top of the display.

5

Expose the sensor to one laser pulse, take the measurement, and observe the result on the display. The TRIG annunciator displays during the measurement, showing that the meter is currently calculating the measurement. The Zero button should not be pressed between measurements.

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Quick Start Guide
FieldMaxII-TOP™
Laser Power/Energy Meter

This guide presents a series of "mini-tutorials" that explains how to connect a sensor to your FieldMaxII-TOP meter and begin taking measurements within minutes. For in-depth information about the FieldMaxII-TOP meter, refer to the *FieldMaxII-TOP User Manual* (1086235).

Software Installation

For complete software installation instructions, refer to the *FieldMaxII™ Software Installation Quick Start Guide* (1096359) that shipped with your product.

Carefully review the following safety information to avoid personal injury and to prevent damage to this meter or any sensor connected to it.

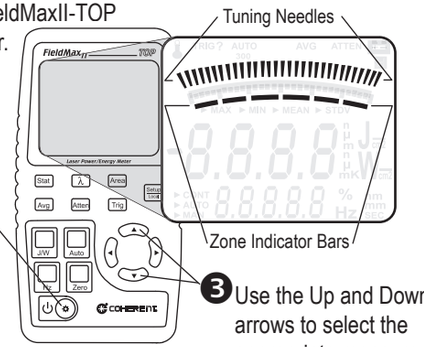
Follow all laser safety procedures. The laser must be blocked or switched OFF before beginning any of the procedures described in this guide.

Power to the FieldMaxII-TOP instrument must be OFF before beginning any of the procedures described in this guide.

Do not exceed the power/energy density limits of the sensor.

Tuning a Laser With a Thermopile or Optical Sensor

1. Connect a thermopile or optical sensor to the FieldMaxII-TOP 25-pin connector.
2. Apply power to the instrument.
3. Use the Up and Down arrows to select the appropriate measurement range. (Instrument is automatically placed in Manual Ranging.)

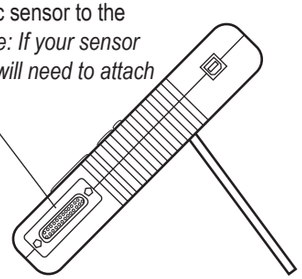


Tuning is shown on the display using tuning needles and zone indicator bars. The tuning needles (at the top of the display) are now zoomed in to enhance laser tuning. For detailed information about Tuning mode, refer to the *FieldMaxII-TOP User Manual.*

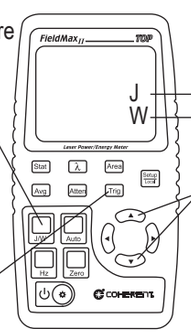
Measuring Energy and Average Power With a Pyroelectric Sensor

The following illustration outlines how to set up a pyroelectric sensor to take an energy or average power measurement.

Connect a pyroelectric sensor to the 25-pin connector. *Note: If your sensor has a BNC plug, you will need to attach a 25-pin adapter.* 1



Select Joules mode to measure energy, or Watts mode to measure average power. 2



3 Press either the Up or Down arrow to manually select the range. *Note: Auto Range is not available for this type of sensor.*

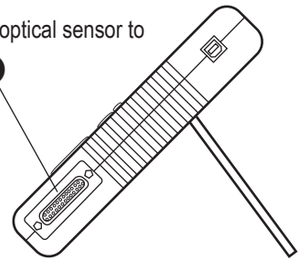
4 Adjust the trigger threshold from 2 to 20% of range. Make sure the trigger threshold is set *below* the energy you plan to measure.

5 Take the measurement and observe the result on the display.

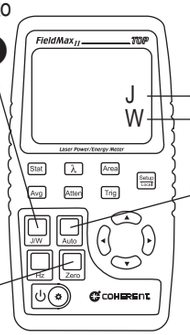
Measuring Power With a Thermopile or Optical Sensor

The following illustration describes how to take a power measurement using a thermopile or optical sensor.

Connect a thermopile or optical sensor to the 25-pin connector. 1



If Joules mode is currently selected, press the J/W button to select Watts mode. 2



3 Press the Auto button to turn on Auto Range.

4 Block the beam and then press the Zero button to set the baseline for the measurement.

5 Unblock the beam, take the measurement, and observe the result on the display. *Note: Thermopile sensors must reach steady-state to obtain an accurate measurement.*